National Ocean Service
Center for Coastal Monitoring and Assessment

1) The most recent laboratory evaluation for the Center for Coastal Monitoring and Assessment was conducted as part of a comprehensive NOS internal program evaluation concluded in 1999. This document is a large notebook and in unavailable in pdf format. We suspect the substance of this report may be marginally relevant to the Research Review Team.

2) Please provide a brief history, and mission of your laboratory /center.

The Center for Coastal Monitoring and Assessment (CCMA) was formed in 1999, concurrent with the formation of the National Centers for Coastal Ocean Science (NCCOS). The center, located in Silver Spring, MD., was the result of combining the expertise of two teams from previous National Ocean Service (NOS) centers and the creation of an additional team. The center now includes scientists with a variety of expertise, including remote sensing, biogeographic characterization, and chemical impacts assessment. CCMA conducts research, monitoring, and integrated assessments of U.S. coral reefs, estuaries, and NOAA sanctuaries and reserves to provide relevant information, products and scientific support to coastal resource managers and scientists. CCMA's mission is to assess and forecast conditions of coastal and marine ecosystems through research and monitoring to characterize and understand these systems for improved management.

3) Please provide a listing of *major* customers of the laboratory /center, with a one sentence description of what is being done for them.

- National Marine Sanctuaries (NMS) Program – CCMA conducts biogeographic assessments in and adjacent to NOAA NMS waters to provide information necessary to evaluate the implementation and efficacy of sanctuary management plans (as specified in 16 U.S.C. § 1433).
- NOAA Coral Matrix and the Coral Reef Task Force (CRTF) - CCMA maps essential fish habitats of U.S. coral reefs, participates in remote sensing research-based mapping and algorithm development, participates in a cooperative research program with the other National Centers for Coastal Ocean Science to better understand the linkages between biological and physical oceanographic processes and fish population distribution, abundance and dynamics. CCMA also fulfills the charge from the CRTF to map the benthic habitats of all coral reefs within U.S. waters, including territories, and to assess reef fish ecologies on these reefs.
- Federal, State and Local Coastal Resource Managers in the Gulf of Mexico – CCMA, in partnership with NOAA's Coastal Services Center, NOAA's Center for Operational Oceanographic Products and Services and NOAA National Environmental Satellite, Data and Information Service (CoastWatch), produces experimental near real-time harmful algal bloom forecast bulletins during bloom events that improve

a manager's ability to respond to these events; CCMA is working to develop similar forecasts for other regions of the country.

- Department of the Interior's National Park Service (NPS) – CCMA is supporting the NPS in the development of reef fish monitoring protocols, habitat mapping and coral reef monitoring for the Virgin Islands-Southern Florida Cluster (VISFC).
- States and Territories Coastal Resource Managers – CCMA provides raw data and CD-ROM and Web-delivered data products, as well as development of protocols, tools and techniques, and technical assistance to the states and territories to enable their utilization of CCMA's monitoring, research and assessments.
- Federal/State/Academic scientists – CCMA provides access to their long-term monitoring data from the National Status and Trends Program as well as other projects to enable a wide variety of scientists to make additional analyses of the data and determine ambient contaminant concentrations at local, regional and national scales.

4) Please provide a short summary of research being conducted

- Research to support the National Marine Sanctuary Program (NMSP) includes: conducting biogeographic assessments to describe the abundance and distribution of natural resources in and around the sanctuary, as well as the habitats and oceanographic features which influence the observed distribution patterns; evaluating the implementation and efficacy of sanctuary management plans; assisting with boundary alternative assessments; mapping benthic habitats; conducting chemical contaminant assessments; providing harmful algal bloom bulletins for the Florida Keys NMS; and, conducting satellite climatology within several other sanctuaries. Pursuant to EO 13158, biological and oceanographic data necessary for the biogeographic assessments will be made available to relevant parties in the Departments of Interior and Commerce, as well as other Federal and State partners, to strengthen and expand a national system of Marine Protected Areas (MPAs). This research is included in the Protected Areas and Ecosystem Research programs. *Geographic Scope:* Global/ National/ Regional CCMA is currently developing biogeographic assessments in the following National Marine Sanctuaries: Channel Islands NMS, Monterrey Bay NMS, Gulf of the Farallones NMS, Cordell Bank NMS, Gray's Reef NMS, Stellwagen Bank NMS, Hawaiian Islands Humpback Whale NMS, and Fagatelle Bay NMS; and conducting contaminant assessments in Monterrey Bay NMS and Stellwagen Bank NMS. *Time Frame:* short/ medium
- Harmful algal bloom research to develop remotely sensed monitoring and forecasting capabilities in support of federal, state and local agencies' monitoring activities. This research involves: a synthesis of data sets, methods, and analysis from numerous agencies and organizations, leading to nearly routine monitoring of the events in the Gulf of Mexico; refinements to improve the accuracy and reliability of experimental forecast Bulletins; and, establishment of the framework and components to begin implementation in other regions, including the US

Northwest, California, and the Gulf of Maine. Analyses and results are used to support relevant research communities, as well as integrating the results of research into a synoptic monitoring program. This research is included in the Ecosystem Research program. *Geographic Scope:* National/ Regional *Time Frame:* short/ medium

- Assessment of water quality and oceanographic conditions for the US coastline using satellite and other relevant data sets. This integrated characterization involves the creation, maintenance, assimilation, and analysis of long-term data sets for chlorophyll, turbidity, sea surface temperature and other relevant data. The data sets are being used as a standard reference to characterize existing conditions, to identify relevant patterns of change, and to support activities by local research communities. This research is included in the Ecosystem Research program. *Geographic Scope:* National/ Local (US coastline and sanctuaries) *Time Frame:* medium
- Chemical impacts assessment to determine sediment toxicity and changes in biological communities resulting from chemical contaminant pollution. Research includes: long-term monitoring of chemical contaminants in coastal waters, sediments and benthic organisms; contributing to the National Coastal Conditions Report (a biennial multi-agency national coastal assessment report); developing a variety of environmental indicators as diagnostic and predictive measures for assessing the status and potential changes in environmental conditions in coastal ecosystems; developing tools and techniques for use by local and state governments to assess coastal pollution problems, including those caused by nutrient over-enrichment; identifying emerging contaminants of concern; and using status and trend data to develop forecasts of ecological conditions. This research is included in the Ecosystem Research program. *Geographic Scope:* National/ regional/ local *Time Frame:* short/ medium/ long
- Coral reef research includes: mapping, monitoring, and assessing reef resources, including fish, invertebrate, hard coral, and water quality in the US Virgin Islands, Puerto Rico and Hawai'i; comprehensive coral reef ecosystem mapping activities in all US States, Territories, and Commonwealths (as relevant); developing spatially explicit models to forecast fish distribution, abundance and habitat usage, as well as fish community responses to management actions and environmental change; and, in partnership with the National Park Service, developing protocols to detect change in specific metrics of reef fish community structure and in selected economically and ecologically important families, trophic groups and species and to test for differences among fish communities inside and outside of Marine Protected Areas (MPAs). CCMA also administers the State and Territory Coral Reef Ecosystem Monitoring Program (as specified in FRN Volume 68, Number 125) and is producing a major biennial integrated assessment, "The State of the US Coral Reef Ecosystems: 2004 Report." This research is included in the Corals program. *Geographic Scope:* Global/ National/ regional/ local. Caribbean: US Virgin Islands and Puerto Rico in partnership with the Department of the Interior, the Territorial Government, and Local Universities; and Florida Keys. Pacific: Hawai'i (Main 8 and the Northwestern Islands) in partnership with the Oceanic Institute, the University of Hawai'i, other

Federal, State and academic collaborators; American Samoa; Guam; and the Commonwealth of the Northern Mariana Islands (CNMI). *Time Frame:* short/ medium.

5.) A list of major accomplishments in the last five years.

- Mapped 40% of all U.S. Coral Reefs, including mapping and characterizing benthic habitats in the Northwest and Main Hawaiian Islands, Puerto Rico and US Virgin Islands and Grays Reef.
- Maintains longest contaminant monitoring program in the U.S.
- Developed new forecasting abilities for harmful algal blooms (HABs) in Florida and subsequently developed plans for an operational forecast system. (To be made operational in 2004.)
- Completed, in collaboration with NOAA's National Marine Sanctuary Program and partners at University of California - Santa Barbara, "A Biogeographic Assessment off North/Central California: To Support the Joint Management Plan Review for Cordell Bank, Gulf of the Farallones, and Monterey Bay National Marine Sanctuaries"
- Characterized sediment toxicity in 35 estuaries in the U.S.

6.) A list of legal mandates for the work in the laboratory/center.

- Coast and Geodetic Survey Act of 1947 [33 USC § 883a-j]
- Ocean Satellite Data [33 U.S.C. § 883j]
- Coastal Zone Management Act [16 U.S.C. § 1451 *et seq.*]
- Coral Reef Conservation Act [16 U.S.C. §§ 6401-6409]
- Data Quality Information Act (Treasury and General Government Appropriations Act for Fiscal Year 2001, Section 515) [P.L. 106-554]
- Endangered Species Act of 1973, as amended [16 U.S.C. §§ 1531-1544]
- Estuary (Estuarine) Protection Act [U.S.C. §§ 1221-1226]
- Estuary Restoration Act of 2000 [33 U.S.C. §§ 2901-2909]
- Executive Order 13089, Coral Reef Protection
- Executive Order 13158, Marine Protected Areas (MPAs)
- Executive Order 13178, Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve
- Executive Order 13196, Final Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve
- Global Change Research Act [15 U.S.C. §§ 2921-2961]
- Harmful Algal Bloom and Hypoxia Research and Control Act of 1998 [16 U.S.C. § 1451 note (P.L. 105-383)]
- Magnuson-Stevens Fishery Conservation and Management Act [16 U.S.C. § 1801 *et seq.*]
- National Coastal Monitoring Act [Title V of the Marine Protection, Research, and Sanctuaries Act (MPRSA)], [33 U.S.C. §§ 2801-2805]

- National Contaminated Sediment Assessment and Management Act [33 U.S.C. §§ 1271]
- National Marine Sanctuaries Act (Title III of the MPRSA) [16 U.S.C. §§ 1431-1445]
- Ocean Dumping Act (Title II of the MPRSA) [33 U.S.C. §§ 1401-1445]